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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,028

09/15/2006

Hiroshi Uehara

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22428 7590 05/26/2010  
FOLEY AND LARDNER LLP  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

CHIN, HUI H

ART UNIT

PAPER NUMBER

1796

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,028	<b>Applicant(s)</b> UEHARA ET AL.	
	<b>Examiner</b> HUI CHIN	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/16/2010 has been entered.

2. This Office Action is in response to the Amendment filed on 3/11/2010. Claims 1-9 are now pending.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tasaka et al. (JP 2002-322321).

Tasaka et al. disclose an elastomer composition comprising 35 parts by weight of SBS, 45 parts by weight of ethylene-butene rubber, 17.5 parts by weight of oil, 17.5

Art Unit: 1796

parts by weight of paraffin, and 20 parts by weight of polypropylene (Example 6). The ratio of melt flow rates and molecular weight distribution are inherent properties.

However, Tasaka et al. are silent on the specific amount of 1-butene in the ethylene/1-butene random copolymer. The specific amount of 1-butene is dependant on the ratio of ethylene to 1-butene in the random copolymer. By adjusting the ratio of ethylene to 1-butene the branching will be affected.

The higher the concentrations of 1-butene, the more the short chain branching. The case law has held that “a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation”. *In re Antoine*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to achieve the relative amount of 1-butene via the routine optimization process and thereby obtain the present invention.

The limitations of claims 3-5 can be found in Tasaka et al. at [0079], where it discloses molding operations.

The limitations of claim 6 can be found in Tasaka et al. at [0079], where it discloses multilayer goods.

The limitations of claim 9 can be found in Tasaka et al. at [0079], where it discloses household appliance.

Art Unit: 1796

5. Claims 2, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tasaka et al. (JP 2002-322321) in view of Ahmed et al. (US Patent 6,184,291).

The disclosure of Tasaka et al. is adequately set forth in paragraph 4 and is incorporated herein by reference.

Tasaka et al. disclose the at least one styrene block copolymer is styrene/butadiene/styrene ([0003]). However, Tasaka et al. are silent on the specific density, MFR, and a molecular weight distribution of ethylene/1-butene random copolymer.

Ahmed et al. disclose an elastomeric composition comprising: a) from about 70 to about 90 percent by weight of a styrene triblock copolymer, b) from about 10 to about 30 percent by weight of an ethylene interpolymers characterized as an interpolymers of ethylene with at least one C<sub>3</sub>-C<sub>20</sub>  $\alpha$ -olefin wherein this interpolymers is ethylene/1-butene having a density of about 0.875 g/cm<sup>3</sup> to about 0.905 g/cm<sup>3</sup>, an MFR of about 1 to 10 g/10 min, and a molecular weight distribution of about 1.5 to about 2.5 (claims 1, 2, col. 6, lines 13-18; col. 9, lines 12-16; col. 11, lines 46-47; col. 12, lines 4-5, and lines 37-38), and Ahmed et al. further disclose the use of extender oils (col. 15 lines 53-55), to provide a thermoplastic elastomeric compositions comprising block copolymers in blend combination with substantially inert ethylene interpolymers (col. 1, lines 23-26). This composition can be fabricated into articles such as fibers, films, coatings and moldings (col. 15 lines 65-66). In light of such benefit, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use this specific ethylene/1-butene random copolymer with the expected success.

### ***Response to Arguments***

6. Applicants' arguments filed 3/11/2010 have been fully considered and are not persuasive.

The applicants had stated "However, one of ordinary skill following the Office's theory would not arrive at the claimed invention because in practice, increasing the amount of 1-butene does not always result in a reduced hydrophobicity and/or increased branching. Accordingly, the recognized result sought by the Office in its assertion that the amount of 1-butene is a result-effective variable stands in contrast to the results of the present invention." Grieken et al. (Macromol. Symp. 2007, 259, 174-180) disclose the copolymerization of ethylene and 1-butene and the results have shown that higher comonomer concentrations involve higher short chain branching (Summary, Table 1).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUI CHIN whose telephone number is (571)270-7350. The examiner can normally be reached on Monday to Friday; 8:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/  
Primary Examiner, Art Unit 1796

/HC/